

New blood test for detecting Alzheimer's disease

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Researchers from Lund University, together with the Roche pharmaceutical company, have developed a method to create a new blood marker capable of detecting whether or not a person has Alzheimer's disease. If the method is approved for clinical use, the researchers hope eventually to see it used as a diagnostic tool in primary healthcare. This autumn, they will start a trial in primary healthcare to test the technique.

Currently, a major support in the diagnostics of Alzheimer's disease is the identification of abnormal accumulation of the substance beta-amyloid, which can be detected either in a spinal fluid sample or through brain imaging using a PET scanner.

"These are expensive methods that are only available in specialist healthcare. In research, we have therefore long been searching for simpler diagnostic tools," says Sebastian Palmqvist, associate professor at the unit for clinical memory research at Lund University, physician at Skåne University Hospital and lead author of the study.

In this study, which is a collaboration between

several medical centres, the researchers investigated whether a [simple blood test](#) could identify people in whom beta-amyloid has started to accumulate in the brain, i.e. people with underlying Alzheimer's disease. Using a simple and precise method that the researchers think is suitable for clinical diagnostics and screening in primary healthcare, the researchers were able to identify beta-amyloid in the blood with a high degree of accuracy.

"Previous studies on methods using blood tests did not show particularly good results; it was only possible to see small differences between Alzheimer's patients and healthy elderly people. Only a year or so ago, researchers found methods using blood sample analysis that showed greater accuracy in detecting the presence of Alzheimer's disease. The difficulty so far is that they currently require advanced technology and are not available for use in today's clinical procedures," says Sebastian Palmqvist.

The results are published in *JAMA Neurology* and based on studies of blood analyses collected from 842 people in Sweden (The Swedish BioFINDER study) and 237 people in Germany. The participants in the study are Alzheimer's patients with dementia, healthy elderly people and people with mild cognitive impairment.

The method studied by the researchers was developed by Roche and is a fully automated technique which measures beta-amyloid in the blood, with high accuracy in identifying the protein accumulation.

"We have collaborated with Roche for a long time and it is only now that we are starting to approach a level of accuracy that is usable in routine clinical care around the world," says Oskar Hansson, professor of neurology and head of the unit for clinical memory research at Lund University.

The researchers believe that this new blood sample analysis could be an important complement for screening individuals for inclusion in clinical drug trials against Alzheimer's disease or to improve the diagnostics in primary care which will allow more people to get the currently available symptomatic treatment against Alzheimer's [disease](#).

"The next step to confirm this simple method to reveal beta-amyloid through blood sample analysis is to test it in a larger population where the presence of underlying Alzheimer's is lower. We also need to test the technique in clinical settings, which we will do fairly soon in a major primary care study in Sweden. We hope that this will validate our results," concludes Sebastian Palmqvist.

More information: Performance of Fully Automated Plasma Assays as Screening Tests for Alzheimer Disease–Related β -Amyloid Status. *JAMA Neurol*. Published online June 24, 2019. [DOI: 10.1001/jamaneurol.2019.1632](https://doi.org/10.1001/jamaneurol.2019.1632)

Provided by Lund University

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